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The Implications of New Educational Concepts for the Prevention of Prematurity*

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In order to understand where we are *now* in our educational work in health, it is necessary to know where we have been. Present theory and practice are outgrowths of earlier theories and practices. We have had time to test their values.

It is not a new idea for public health workers to look to education for help in improving the health status of people. Lemuel Shattuck^{(1)†} knew that education was important. In the report of the Sanitary Commission of Massachusetts he wrote:

"The great object of sanitary science is to teach people the causes of disease—how to remove or avoid these causes—how to prevent disease—how to live without being sick—how to increase the vital force—how to avoid premature decay."

He saw, too, long before health services were introduced into our school programs, that instruction of school children in ways of health was needed. The importance of education was recognized early in this century by the newly formed National Tuberculosis Association, which pioneered in preventative medicine at a time when many health departments were concentrating on priority problems of milk, water and sanitation.

We have no statistical measures of the worth of these educational efforts of 50 or more years ago. We do not know how much was accomplished by education as differentiated from benefits of the services which sanitariums, physicians, and nurses were giving to people.

Chapin⁽²⁾ in 1914 surveyed the public health programs of all states of the Nation. His picture of public health as it was at that time sounds like a story of conditions a hundred years ago, not a mere thirty-eight years. And his appraisal of health education was not complimentary.

"It is now the quality rather than the quantity of health education which needs to be looked out for," said he. "By far the most important thing in public health education is to tell the truth. If sanitary science were an exact science it requires the greatest care in teaching. It should not be made still more inexact by lapses from the truth. It is not necessary to be false to be interesting, though it is much easier."

The Era of Fact-Giving

The two world wars stimulated advances in the medical sciences. Education, too, was prodded into looking at itself to see the part it played in building healthy boys and girls, sound men and women. After the first world war it was concluded that our people did not know enough health facts. We proceeded immediately to develop programs of "fact-giving." Schools introduced health instruction in which teachers, nurses and often physicians gave "talks" to boys and girls; health and civic organizations distributed health pamphlets, gave speeches and sought by every means available to them to create the "informed public in matters of health" that was desired. Every trick of the trade to make information palatable was used.

In the early 1920's Cho-Cho, the health clown, was followed through the streets of eastern cities by

* Presented at conferences on the Prevention of Prematurity, Asilomar, May 14-16, and Arrowhead Springs, May 19-21, 1952.
† Bibliographical references, page 7.

thousands of boys and girls. Fathers and mothers, after supper, recorded the daily health practices of their offspring on a huge chart—which usually hung on a kitchen wall. One national health education program made it possible for a child, if he achieved a high score on his health-behavior chart, to advance from the lowly estate of a feudal serf to the glory of being a knight of King Arthur's Round Table. And in the growing number of health departments, nurses were urged to be teachers of families as well as to render health services. In those days teaching was synonymous with "telling."

In the 1930's and early 1940's the use of new mass educational media helped in the job of "fact-giving." The radio opened the possibility of "selling" health to every home. New color printing techniques made one look twice before folding away for future reference the colorful wheel of the "Basic Seven" or reluctantly putting in the waste-paper basket the comic strip booklets on venereal disease. It is to the credit of public health workers, voluntary health agencies, and the medical and dental societies that they used each technique as it was developed to do the job of "fact-giving" about health.

Techniques Are Changing

At the present time agencies have a large store of techniques and materials with which to "sell" health. A few of the earlier techniques have disappeared, such as the "scare" movies and the great glass bottles exhibiting the horrible distortions of bodily organs that disease or malformation can cause. Gone, too, is Cho-Cho, the clown, and the artificial rewards which even the most conscientious of parents could not continue to give more than a few months. And in the schools, teachers are giving children the opportunity to eat carrots rather than to dress up like carrots, and sing songs about carrots.

All of these efforts directed toward "fact-giving" have brought results. But to what measurable degree, at what financial cost? We have no research in health education that answers these questions. People are better informed about health and more people are taking action on that knowledge. This we know. But we likewise have evidence that, for many people, knowing the facts is not sufficient to motivate them to change their ways of living.

Even before the research studies were made which I am to report to you, health workers had found that in controlled situations in which it was known that every individual had received repeated information regarding action to be taken for the benefit of themselves or their children, these benefits to be secured at no financial cost to themselves, there remained a residue of persons who did not take the desired action. These

percentages range from 12 percent to 20 percent. Some of the current multiple-screening and mass X-ray surveys bear out the invulnerability of segments of the population to educational programs. To vent our indignation toward this ungrateful portion of our public we have applied such words to their behavior as uncooperative, stupid, uneducated and hostile.

We know that the fact-giving techniques work with some people; that they have no effect on others. We have not known until recently the reasons basic to either the positive or negative reactions. At present, however, we are beginning to get glimmerings of the reasons. Our insights come from varied sources. One rich resource developed directly from the research genius of the great social psychologist, Kurt Lewin; a second source is found in the work of cultural anthropologists; the third from the research findings stimulated by the needs of our government during the war to understand the behavior of our soldiers, and of our own behavior as civilians. Brilliant contributions, too, have come from the studies of the attitudes of the German populace after the war and of the behavior and attitudes of Japanese in detention camps.

Not all of these studies can be reported here. I have chosen only a few that have direct bearing on the purposes on the prevention of prematurity.

If we believe that in addition to the "shot-gun" approach of broadcasting information through the media of mass communication there are *additional* ways of pin-pointing the educational methods we use so that information will have significance for the persons receiving it; if we are willing to give the same weight to evidences from research in the social sciences that we are willing to give to research findings in medical sciences; if we are ingenious enough to think of new ways to involve people in tackling a difficult problem such as prematurity; if we are courageous enough to evaluate the purposes and techniques of education we are now following in our agencies, offices and professional associations—it is my conviction that these studies have bearing on changing the attitudes and practices related to preventing prematurity.

The first findings to be reported come from the Warner studies on class stratification in the United States. The next to be reported are the results of studies of the War-Bond educational program. Following these will come a review of the now classical experiments in the use of group approval to change eating habits. Finally I will draw on experiences of a few practitioners of public health in underdeveloped regions of the world.

Studies on Class Stratification

Let us look first at the studies which bring us face to face with facts distasteful to us in the United States.

The Warner⁽³⁾ studies on class stratification give data which contradict or challenge one of the most firmly imbedded values we have derived from our puritan and pioneer ancestry—namely that of *equality*. Because of this conflict it has not been easy to transfer the findings of the class studies into action programs in health education.

The studies of Warner, Davis, Lynd and others demonstrate that we have a society made up of rather well defined classes. We need not be concerned with the technical arguments among the social scientists as to the methods used in gathering the data, the various definitions of "class" or the numbers of classes which exist in any one community. All agree on the existence of class structure. They agree, too, that: (1) each class has different values which it believes in and preserves, and each has different attitudes toward education; (2) each class tends to reject people who are in another class, and (3) each class has different ways of managing their own lives. The class system of this Country is not like that of European countries. It is distinctly our own. It is characterized by mobility, the opportunity to move from class to class, though this is becoming more difficult to do. These general findings are being supported by specific studies. For example, Davis⁽⁴⁾ has pointed out that our teachers come from middle class levels and this fact alone makes it difficult for them to understand or to help the thousands of children they teach who do not come from the middle class. Kinsey⁽⁵⁾ encountered class stratification in seeking to interpret his data.

Thus in attacking the problem of this conference—the prevention of prematurity—should we not stop, look, and *think* before we make misleading assumptions regarding the meaning of pregnancy itself to the individual; the beliefs *about*, and values inherent in pregnancy status and pregnancy management. If we of the middle class are as much in error in our knowledge of how pregnancy is regarded by members of other classes as we have been in our knowledge of other definitive areas of sex behavior we may have to recognize certain facts such as: (1) that all people do not regard the value of an infant life in the way we regard it; and (2) that all people will not easily learn to change behaviors regarding care during pregnancy if these changes are not valued behaviors of the group which determines the standards of behavior.

The difficulties in changing practices and attitudes are not the result of the mere existence of classes. The difficulties exist because within our larger framework of American life each class has its own cultural differences, which means, its own characteristic ways of thinking and behaving that have become common and standardized ways of thinking and behaving.

Havighurst⁽⁶⁾ points out that these "cultural differences between social classes are found in table manners, vocabulary, attitudes toward property and education, leisure time interests, and many other things, important and unimportant." It is the belief of most middle class people that what *they* believe is the common belief of all right minded, intelligent people. This belief makes many of our efforts in education go astray.

Interestingly enough, our classes are not entirely a by-product of socio-economic status. Oftentimes members of the top class have less income than the class below them. Nor will occupations alone distinguish classes. Physicians and teachers are often found in different classes three steps apart. This is easy to understand if we accept Warner's definition of class as being composed of people who feel comfortable with one another and show this by the kinds of people they visit, the clubs they join, and a kind of awareness that they are subordinate or superior to some other group.

The class-stratification studies open up for us the problems of education in any field. We do not have, as far as I know, research which shows the kinds of practices, attitudes and values held regarding prematurity and the relationship of these to class structure. Nor do these studies indicate how we can do more effective teaching in any of the health areas. Fortunately, however, other researches give light on the *how* of persuading people to change old habits or acquire new habits.

Behavior Is Hard to Change

The first impression after digesting the studies on *how* to change established practices is that it is a very difficult task to change any kind of behavior. There are no quick ways to bring about changes that will endure. Even the advertisers are sadly reporting this to be true. They know that fact-giving by the best of media to *unwilling* learners does not convert them into buyers; they know, too, that the willing learners will need to have the product sold to them not nine months of the year, but twelve months. Many people don't appear to stay sold after the most brilliant of campaigns.

War Bond Studies

During the war a research branch of the Department of Agriculture conducted studies for the United States Treasury Department.⁽⁷⁾ The immediate aims were to obtain findings which would guide policy-making to prevent inflation through the sale of Savings Bonds. The undertaking employed a great variety of research techniques and the findings were many.

As educators we are interested in the data bearing on the following questions. What methods were effective in promoting the sale of bonds? What changes in

attitudes did the high-powered campaign induce in the population? What principles of *how people learn* were derived from the studies?

In one two-month period during the Second War Loan it was estimated that more than \$12,000,000 worth of measurable advertising, using all mass media, bombarded the American public. One study made at the conclusion of the campaign showed that only 62 percent of the adult population could recognize the name of the drive and 20 percent of those having an income had bought bonds as a result of the drive.

In the Seventh War Loan \$42,000,000 worth of measurable advertising was used. Ninety-four percent of the adult population now recognized the name of the drive and 40 percent bought bonds. We begin to see that *even the most efficiently conducted campaigns do not produce major effects upon mass behavior cheaply or without considerable effort.*

In these studies there are other findings important to us in planning programs for educating the public. A sample survey was made in Baltimore, Maryland, to learn how many people had read a pamphlet about bonds, the pamphlet having been placed in the mailbox of every household. Eighty-three percent of the people interviewed did not remember having seen it. One third of the 17 percent remembering that they had received it could recognize only the cover; thus about 11 percent of the adult population had read any part of the pamphlet. Reasons given by people for throwing the pamphlet away indicated that in spite of the sensitization to the bond drive by radio, press and public announcements of many kinds, they thought the pamphlet was commercial advertising material, or that it was a children's publication and gave it to their children to read. In other words the pamphlet was rejected before it was ever read because its general characteristics called forth reactions associated with past like experiences.

In another study in Bridgeport, Connecticut, the use of a motion picture to heighten the war effort through citizen participation was tested. Tickets to the movie had been widely distributed throughout the population according to a planned pattern. During the week five percent of the adult population came to the movie. This might have been regarded as highly successful, but *who* were the people who came? A follow-up study showed that the people attending were those whose behavior supporting the war effort was already closest to that encouraged by the movie. They came disproportionately from the upper income levels of the population. The specially planned movie had not reached the people for whom it was intended.

One theoretical conclusion was drawn from this experiment with motion pictures which gives an explanation for the unsatisfactory results often obtained

from the "meetings" we arrange in our communities on venereal disease and tuberculosis education. This conclusion is that most people *tend to protect themselves from situations which may produce unwanted changes in their beliefs and attitudes.* All of us are apt to choose our friends, newspapers, magazines, and the places we go on this basis. We don't venture into enemy territory, knowingly.

A practical application of the Bridgeport study is this: If our objective is to reach people through an information medium, such as the movie, it must be channeled through groups to which people belong or through entertainment channels such as the commercial theater or the county fair.

Another study in this series gives an answer to the question posed earlier, "how effective is a high-powered campaign in changing peoples attitudes?"

The government, throughout a period of 30 months, made direct efforts to help people understand the major objectives behind the war bond program. After each of six war bond drives a sample of the population was asked: "Why do you think the government is anxious to get people to buy bonds?"

The answers, when grouped in definite categories, showed that exactly the same percentages were found in the two major categories after the seventh drive as after the second drive which had taken place 30 months previously. This stability was maintained in the face of the bombarding techniques of fact giving. People appeared to have kept, until the very last, the reasons developed early in the war for buying bonds.

Some final outcomes of interest to us from the bond studies are the following: Increases in the buying of bonds came about when the appeals became *specific.* Thus there was a shift from the very generalized slogan "Buy War Bonds" to telling us the amount to be purchased, the time for buying and place to buy. Increases occurred, too, when personal solicitation followed the sensitization of the public through mass media. A characteristic of the successful solicitation programs was that the person was asked *to make a decision to buy at the time of the interview.*

The study concluded: "In all the data analyzed the same conclusion was reached: people who were personally asked to buy were always found more likely to buy—in every drive, in every income bracket, in every occupational group, in every section of the Country."

We might indeed be discouraged and dismayed by the difficulties offered in inducing changed behavior if we stopped here. We now realize that our stratified-class society poses real problems for the educator. We do not have a *public* to educate but *many groups within that public*, each holding fast to its beliefs and values; each avoiding contact with any information or forces that would disturb those beliefs and values. We know.

too, that mass media to be effective are costly and are demanding in expenditure of time and energy. Mass media may induce action in people already receptive to take action, but there is no evidence to show that, *unsupported by other methods of education*, mass media will change people's attitudes or their understandings.

What course is open to use? Fortunately, from the unique researches started by Kurt Lewin and carried on by others, and from the programs of public health staff working with primitive peoples, we now have a few positive directions.

Studies in Group Learning

Let us first look at some of the experimental studies in group learning. These studies are familiar to many of you. Seeing them, however, in the context of this evolution of educational methods which I am briefly reviewing, and evaluating them for their usefulness in preventing prematurity—may give them additional meanings.

Fully cognizant of the wastefulness of earlier educational methods used in attempting to change the attitudes and practices of people, Kurt Lewin asked himself, in effect, a question like this.

"If a group sets its own standards of behavior and if it rejects fact-giving from outsiders, is it possible for a group to develop a new standard for itself and then to take action based on directions originating from the group itself?"

He set out to test this hypothesis.

In 1943 he reported on the first experiment. It was entitled "Group Decision and Request as Means of Changing Food Habits."⁽⁸⁾ The experiment was concerned with increasing the consumption of whole wheat bread. Eight dormitories for men students at the University of Iowa were involved. Four pairs of dormitories were matched according to similar percentages of consumption of whole wheat bread before the experiment started. One dormitory of each pair was given a simple request to increase its use of whole wheat bread. The other dormitory of each pair discussed the problem, and made a decision, as a group, regarding the change. Individuals in the second series of dormitories made more changes in their eating habits. The desire to conform to the new group standard was effective for many men in overcoming their personal dislikes. However, when the group decision was based on too small a majority, there was a reaction which made the outcome in changing even *less* favorable than the request to change in the other paired dormitory. Evidently a bare majority is *not* a group decision.

A second experiment involved procedures more akin to our work in public health education. A nutritionist

and a group discussion leader worked together in two different settings to help women introduce new dishes of kidneys, brains and hearts to the family table. There were six paired groups. In one series of the paired groups the nutritionist gave a lecture to the women. In the other series, as a consultant, she gave technical information to the group only when it was appropriate. The latter groups freely discussed their aversions and their problems in relation to these new foods. The discussion groups *finally* came to decision to try out the foods. Whereas 10 percent of the women hearing the lectures subsequently served the foods to their families, 52 percent of the women in the discussion-decision groups did so. Since these were artificially constructed groups paired on bases of economic level, one wonders if the induced changes in eating habits might not have been even more decisive if the groups had been *natural* groupings of people whose lives were interwoven.

A third experiment by a student⁽⁹⁾ of Lewin's in the Harwood Manufacturing Company gives another answer as to *how* to induce change. French found that resistance to changing workers within the plant from one operation to another was reduced materially when *participation by representatives of the workers in the planning for such changes* was made possible.

Principles Regarding Change

Out of these and many other studies we now have two positive principles regarding ways of changing attitudes and practices; (1) participation by the group in planning for change reduces aggression and negativism. As another writer has put it, "That which one has helped to plan is not easily put aside." (2) The use of group discussion, leading to decision-making, enables individuals within the group to accept new ideas since these ideas have group sanction behind them.

The group discussion-decision method gives those of us who work in health agencies one important clue as to how we can be more effective in our work. Evidently there is likelihood of our pearls of scientific wisdom being more effective when we serve as consultants to groups that have found a problem and are working on it—than when we give them one of our best prepared lectures.

Practitioners in Educational Techniques

Let us turn now to some practitioners in the field of public health. What can we learn from them?

Hydrick

There is one man who, in my mind, stands out over all others. This man was and still is one of the workers of the Rockefeller Foundation staff. His name is Dr. J. L. Hydrick.⁽¹⁰⁾ In 1937 a modest publication came

out over his name entitled "Intensive Rural Hygiene Work and Public Health Education of the Public Health Service of Netherlands India." Only a few read it; fewer took action on it. But in this book Doctor Hydrick presented the story of how, through patient trial and error efforts, he developed principles of teaching health to the Japanese people—principles many of which are now confirmed by research.

It is not possible today to sketch even briefly the fundamentals of changing peoples practices and attitudes that Hydrick discovered for himself. The book must be studied leisurely to appreciate fully the significance of his contributions. He writes of his experiences and judgments in administering clinic and field services of many kinds; of his use of educational media; of his problems and frustrations in trying to get mothers to seek prenatal care and men to build latrines. But in the course of his work Doctor Hydrick discovered a very important fact. He learned that *people who are in one social class do not accept easily the teaching given them by a person from a higher social class.* (This is what Allison Davis has pointed out in the case of teacher-student relationships.)

Let me quote from Hydrick. Later I will give a statement of a principle underlying educational method which appeared in a recent issue of the journal, *Human Relations*. Hydrick derives his principle from observations in the field; Cartwright⁽¹¹⁾ from controlled laboratory research. They reach the same conclusion.

Hydrick writes: "In 1924, when the general survey was begun, intensive health education was carried out for a very short time in a few villages to study the reaction of the people and to secure their cooperation during the survey. For this purpose, hospital trained nurses were used for the educational work. It was thought at that time that the hospital trained nurse would be the proper person for this work and that his training in regard to diseases would form a good basis for further training in hygiene.

"These trained nurses, however, were disappointing. They were unable or unwilling to learn the proper technique of the house-visit and remained on a far-too-high level for the work. The people felt at once that the nurse was of much higher rank and the nurse was unwilling to speak in simple language. * * * Also the house-visit took too much the form of a lecture to the people instead of a visit with general conversation."

Out of observations like these came the idea of selecting and training a few village "mantri" who could then work with their own people within a well-defined educational program. Doctor Hydrick, now Director of Medical and Health Education Services in Ica, Peru, is continuing his efforts (which he still regards as experimental) to learn how best we can teach people new health behaviors. For the purposes of program

planning in Ica he recognizes three distinct social classes. The personnel and approaches used in education differ for each class. The training of personnel who are selected from each of the three classes, likewise differs both in length of time for training and content of the courses. The Ica program is the only public health program with which I am familiar that has been translating the findings of the class studies into action.

Cartwright

In concluding this brief statement of Hydrick's educational work, I wish to quote the statement referred to earlier from "*Human Relations*." Dorwin Cartwright in a provocative article gives eight principles basic to achieving change through education. His first principle is as follows:

"If the group is to be used effectively as a medium of change, those people who are to be changed and those who are to exert influence for change must have a strong sense of belonging to the same group."

It is this principle which Hydrick (as a medical officer) discovered in Java. His work in Ica is an experiment in its applications.

Williams

Dr. Cicely Williams,⁽¹²⁾ an adviser in Maternal and Child Health to the World Health Organization, is another person who has dedicated her life to teaching health to underprivileged people. In a recent article written for a British journal she says:

"Health education in the tropics is the chief function of a medical service. It is not enough to build hospitals that impress the eye and pleases the sanitarian. It is not enough to provide insecticides and antibiotics. It is not enough to provide balanced meals for individual school children and for pregnant mothers. It is the teaching of the individual that matters.

"A great deal of money and attention are now being spent on 'mass' education, perhaps in the hope of finding a shortcut to improved health and well being. * * * When these methods have failed to achieve much beyond preaching to the converted, then the public health officers will often search for still more vivid films, still more lurid posters, still more persuasive pamphlets. But in the underdeveloped areas these mass methods are not likely to achieve more than very moderate success."

Ladkin

In the East African Medical Journal of December, 1950, is described a health education program in Buganda. Whereas Doctor Williams, in her article, stresses face-to-face teaching, Mr. Ladkin⁽¹³⁾ of the Uganda Medical Service subscribes to group methods of teaching. He says:

"In matters of sanitary improvement, what the individual thinks is much less important than what the community thinks. For a man to be persuaded to dig a latrine, two things are necessary: firstly, that he should be convinced of its value and of the necessity for having a latrine, and secondly, that he should be reasonably sure that his action will have the approval and preferably the commendation of his neighbors and that it will be free of any chance of ridicule. * * * It is only by a *group approach* towards health education that we can hope to create a fashion for hygiene improvements."

No Single Educational Formula

This has been a bird's eye view of a few studies and field programs that I believe have bearing on the educational phases of any program for the prevention of prematurity. Certainly it is evident that there is no one educational formula which can be used in every community. It is likewise evident that if these studies have meaning for educational programs, those meanings will have to be developed by you who are here, your associates, and representatives of your community.

If such a venture is undertaken you will, in line with the studies and Hydrick's work, surely need to face squarely the efficacy of the teaching methods you are now using. No matter what the status may be of any group in the community whose cooperative effort is essential to lessening the premature death rate, the following questions are valid:

1. Who should participate in planning the program so that resistances to change will be lessened?
2. How can we find and train leaders to teach new concepts to their own groups regarding prevention of prematurity?
3. How can we use our specialists and our budgets wisely?

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Assistant Health Officer Examination

The City of Long Beach announces an open competitive examination for assistant health officer. Salary range: \$593 to \$733 per month. Applications must be filed by 4 p.m., Friday, July 25, 1952. The examination will be held Tuesday, August 5, 1952, 1:30 p.m. at 332 Municipal Utilities Building, 215 West Broadway, Long Beach. There will be no written examination and the final grade received by any candidate will depend on an evaluation of his qualifications, education, and experience, based on the oral interview. For requirements, descriptions of duties, and application blanks write to the Long Beach Civil Service Board at the address given above.

Social Service Chief Appointed

Mrs. Esther C. Spencer has been appointed chief of Social Service in the State Department of Public Health. For the past two years, Mrs. Spencer has been Supervisor of the Medical Social Training Project in Boston under the auspices of the Children's Bureau, and during this time was on the faculties of Boston University, Boston College and Simmons School of Social Work. Through this project, field work placements in public health settings were provided in the Massachusetts Department of Public Health Section of Social Work and fellowships were administered to attract social work students to the field of public health.

Mrs. Spencer received her master's degree (MSW) at Smith College School of Social Work. She has established social service programs in Veterans Administration hospitals and tuberculosis hospitals. She served as a medical social consultant in the Public Health Service Division of Tuberculosis (now the Division of Chronic Disease).

Social service was set up as an administrative unit within the department in January, 1951. The staff has been working in continuous association with other department personnel to identify social and emotional factors relevant to health, and to develop programs which will realistically meet the needs of the people in California.

Correction

In the lead article in the May 31, 1952, issue "Venereal Disease Control—A Continuing Challenge" by A. Frank Brewer, M.D., six important words were omitted. Their omission beclouded one important point of Dr. Brewer's paper. We are repeating the last few sentences of paragraph three, second column, page 170 with the omitted words in italics:

"Our epidemiological experience³ over many years raises a grave question regarding the noninfectiousness of latent syphilis. On the average, 100 cases of newly reported infectious syphilis will name 200 contacts. When these contacts are examined about 20 cases of *infectious syphilis* and 30 cases of syphilis in other stages are found in the same examined group of contacts, or a total of 50 cases, and in some instances 100 cases of syphilis in all stages are found in the contacts reported by 100 infectious cases. It is possible that some of these so-called noninfectious cases were sources of new cases."

Napa County Nursing Positions

The Napa County Health Department has two positions open for staff public health nurses who meet the State of California requirements for public health nursing certification. The salary is \$3,900 per year; a car is required and the mileage rate is 8 cents per mile.

The Napa County Health Department has been organized for three years and has a generalized program including school nursing. For further information address K. W. Haworth, M.D., Health Officer, County of Napa Health Department, P.O. Box 749, 2281 Elm Street, Napa, California.

Nursing Consultants Appointed

Eliza C. Avellar and Gertrude L. Craddock joined the staff of the California State Department of Public Health during May. Miss Avellar, appointed as a maternity hospital nursing consultant, will work in the central part of the State. Miss Craddock will serve on a state-wide basis as mental health nursing consultant.

Miss Avellar, a native of California, received her basic nursing education at the University of California. She was head nurse on the Obstetrical Service at the University of California Hospital from 1936 to 1943. From 1944 until the spring of 1952, she was clinical instructor in obstetrical nursing at the Chicago

In Hospital. She received a master of science degree with a major in supervision from the University of Chicago.

Miss Craddock graduated from St. Edward's School of Nursing in Fort Smith, Ark., and completed the public health nursing program of study at George Peabody College in Nashville, Tenn. She obtained a bachelor's degree from Boston University with a major in pediatric nursing and a master of arts degree from Teachers College, Columbia University, upon completing the curriculum for nursing consultants in mental health. Miss Craddock has had experience as a public health nurse, supervisor and mental health nursing consultant with the Arkansas State Department of Public Health. She served in the Army Nurse Corps for nearly three years.

Home Canners Warned on Botulism

Advent of the canning season prompts the State Department of Public Health to caution all home canners as to the necessity for careful preparation and processing of foods in order to avoid the serious and often fatal condition of botulism. This disease results from toxins formed in improperly canned foods and every precaution should be taken by the home canner to prevent the formation of these toxins in the foods they process.

Since July 1, 1951, 11 cases of botulism occurred in California and, of these, seven died. In every instance improperly canned food was either definitely proven or implicated by investigation as being the cause of the illnesses and deaths.

Botulism can be prevented by carefully applying the known scientific measures for home canning, which may be accomplished by proper use of steam pressure cookers. Local health departments assist people in obtaining detailed information on home canning or direct them to those agencies where instructions can be given.

Public Health Legal Representative

Howard F. Goldin, Deputy Attorney General, has been assigned by the Attorney General to represent the State Department of Public Health in the Los Angeles area. Bayard Rhone, who was recently appointed judge of the Municipal Court in Los Angeles, was the department's previous legal representative for that area.

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